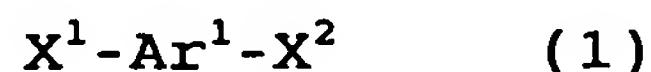


Claims

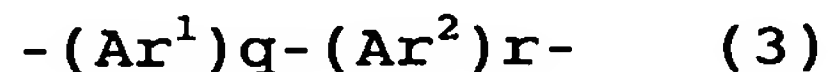
1. A method for producing a polymer compound, wherein said method comprises
a method for polymerizing a monomer represented by the following formula (1) in the presence of a condensation reagent to produce a homopolymer:



(wherein X^1 and X^2 independently represent groups to be eliminated in condensation, and Ar^1 represents di-valent aromatic group having a substituent group comprising at least a sulfonic acid or a salt thereof, or a sulfonic acid via a connecting group or a salt thereof), or
for copolymerizing a monomer represented by the above-described formula (1) and a monomer represented by the following formula (2) in the presence of the condensation reagent to produce a copolymer represented by the following formula (3):



(wherein X^3 and X^4 independently represent groups to be eliminated in condensation, and Ar^2 represents di-valent aromatic group optionally having a substituent group),



(wherein Ar^1 and Ar^2 respectively represent the same meanings described above, q represents a positive number, r represents 0 or a positive number, and the sum of q and r is 300 or more); and
wherein said condensation reagent and said monomer(s) are mixed

at a temperature of 45°C or more.

2. The method according to Claim 1, wherein the condensation agent is a transition metal complex.

3. The method according to Claim 2, wherein the transition metal complex is a zero-valent transition metal complex.

4. The method according to Claim 3, wherein the zero-valent transition metal complex comprises at least one selected from the group consisting of a zero-valent nickel complex and zero-valent palladium complex.

5. The method according to Claim 4, wherein the zero-valent nickel complex is bis(1,5-cyclooctadiene)nickel(0).

6. The method according to any one of Claims 2 to 5, wherein 2,2'-bipyridyl is further co-present.

7. A polymer compound produced by any one of methods according

to Claims 1 to 5.

8. The polymer compound according to Claim 7, comprising the formula (3) and having a number-average molecular weight of 5×10^4 or more in terms of polystyrene standard.

9. The polymer compound according to Claims 7 or 8, having an ion-exchange capacity of 0.8 meq/g or more.

10. A polymer electrolyte comprising an ingredient comprising the polymer compound(s) according to Claims 7 to 9.

11. A polymer electrolyte membrane comprising the polymer electrolyte according to Claim 10.

12. A catalyst composition comprising the polymer electrolyte according to Claim 10.

13. A polymer electrolyte fuel cell comprising the polymer electrolyte membrane according to Claim 11.

14. A polymer electrolyte fuel cell comprising the catalyst composition according to Claim 12.